Honors Chemistry - Reactions Problem Set

Stasya

1. Balance the equation for $N_2 + H_2 \rightarrow NH_3$.

2. Write a balanced equation for the statement: calcium chloride and chromium (III) nirate yield calcium nitrate and chromium (III) chloride.

3. Identify the reaction as either synthesis or decomposition and balance the equation: chlorine plus calcium $\rightarrow$

4. Identify the reaction as either synthesis or decomposition and balance the equation: beryllium carbonate $\rightarrow$

5. Use the activity series to determine if the reaction silver and tin (IV) bromide occurs. If the reaction occurs, write the equation and balance.

6. Use the activity series to determine if the reaction barium iodide and bromine occurs. If the reaction occurs, write the equation and balance.

7. Balance and write the equation for sodium carbonate + hydrochloric acid.

8. Balance and write the equation for magnesium chloride + cesium sulfate.

9. Determine the reaction occurring and write a balanced chemical reaction for the reaction between mercury (II) hydroxide and phosphoric acid.

10. Determine the reaction occurring and write a balanced chemical reaction for the reaction between strontium oxide and water.

11. Write the net ionic equation for a small piece of magnesium metal reacting with a solution of hydrobromic acid.

12. Write the net ionic equation for a solution of copper (II) chloride reacting with a solution of lead (II) acetate.

13. Write the oxidized element, the oxidizing agent, the reduced element, and the reducing agent for the reaction $3H_2S + 2HNO_3 \rightarrow 3S + 2NO + 4H_2O$.

14. Write the oxidation numbers above each element and determine if the equation is a redox reaction:
$NH_4NO_3 \rightarrow N_2 + H_2O$

15. Write a description for what occurs in a combustion reaction.

16. Sketch the activity series for metals and halogens and label the most reactive metals and the least reactive metals.

17. Predict the products and write a balanced equation for the reaction bewteen copper (II) sulfate + zinc chloride.

18. Predict the products and write the balanced equation for $CH_4 + O_2 \rightarrow$

19. What does a nonmetal oxide plus water form?

20. What does a metal oxide plus CO_2 form?

21. What does a metal oxide plus water form?

22. Write an equation for lithium chlorate decomposing.

23. Write a equation for the decomposition of water.

24. Write a equation for lithium reacting with oxygen.

25. Write a equation for potassium reacting with chlorine.

26. Write a equation for aluminum hydroxide decomposing.